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Remarks:

Regarding the rejection of claims 1-21 under 35 USC 103(a) as allegedly being unpatentable over U.S. Patent No. 5,498,277 to Floyd et al. (hereinafter "Floyd") in view of U.S. Patent No. 4,968,661 to Teller et al. (hereinafter "Teller"):

Applicants respectfully traverse the rejection of the foregoing claims in view of Floyd and Teller.

Prior to discussing the merits of the Examiner's position, the undersigned reminds the Examiner that the determination of obviousness under § 103(a) requires consideration of the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1 [148 USPQ 459] (1966): (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations, if any, of nonobviousness. *McNeil-PPC, Inc. v. L. Perrigo Co.*, 337 F.3d 1362, 1368, 67 USPQ2d 1649, 1653 (Fed. Cir. 2003). There must be some suggestion, teaching, or motivation arising from what the prior art would have taught a person of ordinary skill in the field of the invention to make the proposed changes to the reference. *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). But see also *KSR International Co. v. Teleflex Inc.*, 82 USPQ2D 1385 (U.S. 2007).

A methodology for the analysis of obviousness was set out in *In re Kotzab*, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000) A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher."

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It must also be shown that one having ordinary skill in the art would reasonably have expected any proposed changes to a prior art reference would have been successful. *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 1207, 18 USPQ2d 1016, 1022 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894, 903-04, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988); *In re Clinton*, 527 F.2d 1226, 1228, 188 USPQ 365, 367 (CCPA 1976). "Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure." *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988).

In the Office Action, the Patent Office stated:

First, Applicant primarily argues that no excess oxygen is required in claim 1.

The Examiner respectfully points out that claim 1 utilizes the term "comprising," which is open language allowing the possibility of other steps to be included in the claimed process (MPEP § 2111.03). In addition, the degree of combustion will vary depending on the amount of oxygen supplied. This is evidenced by Floyd et al., wherein the degree of combustion is about 40% to about 50% (abstract), and by Teller, wherein complete or substantially complete combustion of carbon-containing fuels may be effected by the addition of excess oxygen must be added in excess (col. 1, lines 66-67 to col. 2, lines 1-2). Thus, to obtain a degree of combustion between 50%, as taught in Floyd, and 100% (completeness), as taught by Teller, it would have been obvious to one of ordinary skill in the art to optimize the amount of oxygen in the system.

Second, Applicant alleges that the Teller reference is not remotely relevant to the smelting process of Floyd. In response, it is noted that the portion relied upon in Teller would be common knowledge to one of ordinary skill who works in a field requiring an understanding of combustion (e.g., smelting). The basic principles of combustion are not strictly limited to the oxidation catalysts of Teller and should not be narrowly interpreted as such.

Applicants respectfully disagree with these representations by the Patent Office.

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Attached is a *Declaration* being filed under 37 CFR §1.132 (hereinafter "the Declaration") illustrating that it would not have been obvious to one of ordinary skill in the art at the time of the invention to optimize the amount of excess oxygen needed, as evidenced in Teller, in the combustion reaction of Floyd as alleged by the Patent Office.

Specifically, the Declaration shows (A) the process of claim 1 can not work with excess oxygen (see paragraph 5), (B) excess oxygen will only produce iron oxide and can not produce metallic iron (see paragraph 6), (C) Floyd teaches 50-60% of fuel/reductant is to remain for involvement in the smelting reduction, a situation not possible with excess oxygen (see paragraph 7), (D) Teller provides no guidance in relationship to a skilled person in the art of smelting reduction of oxidic iron source material because Teller teaches full combustion of a carbonaceous material to carbon dioxide and water leaving no combustible intermediate product (see paragraph 10), (E) Floyd expressly sets an upper limit of a degree of combustion of 50% (see paragraph 12), and (F) a skill artisan would not be aware of any motivation to depart from the teachings of Floyd because departing from Floyd is contrary to available data and practice and that complete or substantially complete combustion of the fuel/reductant would result in little if any recovery of metallic iron (see paragraph 15).

In view of the foregoing remarks and the Declaration, reconsideration of the rejection raised by the Patent Office is respectfully requested, and early issuance of a *Notice of Allowance* is solicited. Should the Patent Office in charge of this application believe that telephonic communication with the undersigned representative would meaningfully advance the prosecution of this application towards allowance, the Patent Office is invited to contact the undersigned at their earliest convenience.

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PETITION FOR A THREE-MONTH EXTENSION OF TIME

Applicants respectfully petition for a three-month extension of time in order to permit for the timely entry of this response. The Commissioner is hereby authorized to charge the fee to Deposit Account No. 14-1263 with respect to this petition.

CONDITIONAL AUTHORIZATION FOR FEES

Should any further fee be required by the Commissioner in order to permit the timely entry of this paper, the Commissioner is authorized to charge any such fee to Deposit Account No. 14-1263.

Respectfully Submitted;



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28 July 2009
Date:

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Enclosures – as indicated (RCE, Declaration)

CERTIFICATION OF TELEFAX TRANSMISSION:

I hereby certify that this paper and all attachments thereto is being telefax transmitted to the US Patent and Trademark Office to telefax number: 571 273-8300 on the date shown below:



Allyson Ross

28 July 2009
Date:

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